

AUTHORS: Terent'yev, A. P., Obtemperanskaya, S. I., SOV/32-24-7-12/65
Buzlanova, M. M.

TITLE: A Potentiometric Method of the Determination of Acrylonitrile
 With the Help of Hydroxylamine (Potentsiometricheskiy metod
 opredeleniya akrilonitrila s pomoshch'yu gidroksilamina)

PERIODICAL: Zavodskaya Laboratoriya, 1958, Vol. 24, Nr 7,
 pp. 814 - 815 (USSR)

ABSTRACT: For the quantitative determination of acrylonitrile the reaction
 with hydroxylamine was used:

$$\text{CH}_2=\text{CH}.\text{CN} + \text{NH}_2\text{OH} \rightarrow \underset{\text{HHOH}}{\text{CH}_2}-\text{CH}_2\text{CN}$$

The reaction proceeds quantitatively in a neutral or weakly al-
 kaline medium. The forming β -hydroxyl-amino propionitrile can be
 titrated potentiometrically with a 0,1 n hydrochloric acid
 solution, if the excess quantity of free hydroxylamine is bound
 by acetone. A Λ 0-5 lamp potentiometer and a glass electrode
 were used. The oxime produced in the reaction of hydroxylamine
 with acetone is neutral and does not disturb the determination.
 The results obtained from parallel determinations with pure

Card 1/2

A Potentiometric Method of the Determination of
Acrylonitrile With the Help of Hydroxylamine

SOV/32-24-7-12/65

acrylonitrile are given in table, together with the exact
prescription for the analysis. This method can be used for the
quantitative determination of acrylonitrile in colored solutions.
There is 1 table.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova
(Moscow State University imeni M.V. Lomonosov)

Card 2/2

TERENT'YEV, A. P.

79-1-17/63

AUTHORS: Grinev, A. N. , Terent'yev, A. P.

TITLE: Investigations in the Field of Quinones (Issledovaniya v oblasti khinonov) XX. The Production of Naphthoquinones and Dihydroanthraquinones (XX. Polucheniye naftokhinonov i digidroantrakhinonov)

PERIODICAL: Zhurnal Obshchey Khimii, 1958, Vol. 28, Nr 1, pp.75-78(USSR)

ABSTRACT: The methods of the synthesis of p-naphthoquinones, based on the oxidation of 1-amino-4-oxynaphthalenes, 1,4-diaminonaphthalenes, naphthalene, 2-methylnaphthalene and others either lead to small yields of 1,4-naphthaquinones or they are not well applicable in the performance. The synthesis of 1,4-naphthoquinone (formula VII) and 2-methyl-1,4-naphthoquinone (VIII) was recently realized by the condensation of p-benzoquinone and toluquinone with divinyl (references 8 and 9). Although the reaction of p-quinone derivatives (I), (II) and (III) with divinyl gives almost quantitative yields, complications occur due to their isomerization to hydroquinones (IV), (V)

Card 1/3

79-4-17/83

Investigations in the Field of Quinones. XX. The Production of Naphthoquinones and Dihydroanthraquinones

and (VI). It was determined that the isomerization takes place especially well on heating of the derivatives with acetic acid at boiling temperature. The oxidation of the hydroquinones (IV), (V), (VI) and quinones (VII), (VIII) and (IX) took place with the use of chromic acid. The synthesis of the derivatives (I), (II) and (III), their isomerization and the oxidation of the hydroquinones (IV), (V), (VI) took place without any liberation of intermediate products. The yields were good. For the synthesis of the p-quinones of the dihydronaphthalene series the authors had earlier used potassium bromate in an acid medium. With this very convenient oxidizing agent the fairly hard accessible dihydronaphthoquinones were obtained with almost quantitative yields. In the present work the authors under the same conditions with the aid of the same oxidizing agent synthesized three further naphtho-(X) and dihydroanthra-(XI), (XII)-quinone derivatives. There are 15 references, 5 of which are Slavic.

Card 2/3

Investigations in the Field of Quinones. XX. The Production of Naphthoquinones and Dihydroanthraquinones 79-1-17/63

ASSOCIATION: **Moscow State University**
(Moskovskiy gosudarstvennyy universitet)

SUBMITTED: December 28, 1956

AVAILABLE: Library of Congress

Card 3/3

1. Chemistry 2. Hydroquinone-Isomerism

TERENT'YEV, A. P.

77-1-18/63

AUTHORS: Grinev, A. N. , Terent'yev, A. P.

TITLE: Investigations in the Field of Quinones. (Issledovaniya v oblasti khinonov) XXI. On the Structure of the Products Obtained by Condensation of Toluquinone and α -Naphthoquinone With Acetoacetic Ester (XXI. O stroenii veshchestv, poluchennykh kondensatsiyey tolukhinona i α -naftokhinona s atsetouksusnym efirov)

PERIODICAL: Zhurnal Obshchey Khimii, 1958, Vol. 28, Nr 1, pp.78-87(USSR)

ABSTRACT: Graebe and Levy already found that the reaction of toluquinone with acetoacetic ester leads to two compounds with melting points of 173 and 122°C, but no further investigations on this were made. In an earlier paper the authors stated that the compound with a melting point of 122°C preferable is formed when the reaction is performed under a rapid addition of toluquinone to the mixture of acetoacetic ester, zinc chloride and alcohol on heating. Two possible structure formulae (I) and (II) may be assumed for this compound. In the oxidation of the diethyl ester of 2,6-dimethylbenzo-(1,2-b; 4,5-b')-

Card 1/3

79-1-10/65

Investigations in the Field of Quinone. XXI. On the Structure of the Products Obtained by Condensation of Toluquinone and α -Naphthoquinone With Acetoacetic Esters

-difurfurane-3,7-dicarboxylic acid (III) a quinone (IV) was obtained from that of benzodifurfurane. As far as this quinone is also formed in the oxidation of the derivative of benzodifurfurane obtained by the condensation of toluquinone with acetoacetic ester, it may with certainty be assumed that this compound represents (I) a diethylester of 2,4,6-trimethylbenzo-(1-2-b;4,5-b')-difurfurane-3,7-dicarboxylic acid. The structure formulae (III) and (IV) cannot be doubted. By the condensation of toluquinone with acetoacetic ester in alcohol-dissolved zinc chloride on slow addition of toluquinone the ethylester of 2,6-dimethyl-5-oxybenzodifurfurane-3-carboxylic acid (VI) with a melting point of 173°C is obtained (see formulae). Thus it is stated that in this manner the methyl group of toluquinone causes the entrance of the acetoacetic ester molecule into the para-position. The structure of formula (VI) is illustrated according to the given scheme (VII, VIII, IX and X). The reaction of α -naphthoquinone with acetoacetic ester, analogous to the given facts, had to lead to the ethylester of 2-methyl-5-oxy- α -naphtho-

Card 2/3

Investigations in the Field of Quinone. XXI. On the Structure of the Products
Obtained by Condensation of Toluquinone and α -Naphthoquinone With Aceto-
Acetic Esters

79-1-18/63

furfurane-3-carboxylic acid (XVIII), which was supported by further structured proofs. Thus the structure of the compounds obtained in the condensation of toluquinone and α -naphthoquinone with acetoacetic ester were determined and a number of substituted benzofurfuranes, benzodifurfuranes and naphthofurfuranes were synthesized. There are 13 references, 6 of which are Slavic.

ASSOCIATION: **Moscow State University**
(Moskovskiy gosudarstvennyy universitet)

SUBMITTED: December 28, 1956

AVAILABLE: Library of Congress

Card 3/3 1. Chemistry 2. Condensation reactions

TERENT'YEV, A. P.

79-1-46/63

AUTHORS: Terent'yev, A. P. , Volodina, M. A. , Mishina, V. G.

TITLE: The Synthesis of Pyrrolidine Bases From γ -Ketoalcohols
(Sintez pirrolidinovykh osnovaniy iz γ -ketoalkogoley)

PERIODICAL: Zhurnal Obshchey Khimii, 1958, Vol.28, Nr 1, pp.223-225(USSR)

ABSTRACT: The authors earlier showed that on heating of γ -acetopropyl and secondary γ -acetobutyl alcohol with formamide and N-phenylformamide in the presence of a nickel catalyst an amination and reduction of the carbonyl group takes place, where the closing of the cycle takes place at the expense of the NH_2 - and OH-group (both in position 1, 4). The reaction products were the corresponding pyrrolidine bases: γ -methylpyrrolidine, 2,5-dimethylpyrrolidine, N-phenyl-2-methylpyrrolidine and N-phenyl-2,5-dimethylpyrrolidine. In the present report these syntheses are more exactly described and their applicability is shown. By further investigating the hydroamination reaction of γ -acetopropyl and secondary γ -acetobutyl alcohol the authors used various N-substituted formami-

Card 1/2

79-1-46/63

The Synthesis of Pyrrolidine Bases From γ -Ketoalcohols

des (N-methylformamides, N-ethyl-, N-p-tolyl, N-o-tolyl, N-p-anisyl-, N-o-anisylformamide). In all cases the corresponding pyrrolidine bases (formulae (I) to (XII)) resulted. The N-substituted formamides were produced by mixing amines with formic acid. The nickel catalyst in all cases lowered the reaction temperature, but remained without an essential influence upon the yield of pyrrolidine bases (20-50%). In comparison with an earlier datum the yield of γ -methylpyrrolidine could be increased to 30 %. In all cases the hydroamination of secondary γ -acetobutyl alcohol gives a smaller yield of pyrrolidine bases (at maximum 30 %). The last fact gives rise to the thought that the presence of the substituents in position 2,5 on the one hand disturbs the closing of the cycle, but on the other hand also makes it unstable under the reaction conditions. This assumption was supported by some investigations of Yu. R. Yur'ev. There are 7 references 4 of which are Slavic.

ASSOCIATION: **Moscow State University** (Moskovskiy gosudarstvenny universitet)
 SUBMITTED: December 30, 1956
 AVAILABLE: Library of Congress
 Card 2/2 1. Chemistry 2. Prolines 3. Hydrolysis

TERENT'YEV, A. P.

79-1-47/63

AUTHORS:

Yurkevich, A. H. , Dombrovskiy, A. V. : Terent'yev, A. P.

TITLE:

The Haloidarylation of Unsaturated Compounds With Aromatic Diazo Compounds (Galoidoarilirovaniye nepredel'nykh sovedineniy aromaticheskimi diazosoedineniyami) X. The Synthesis of DL-Phenylalanine and Its Homologues (X. Sintez DL-fenilalanina i yego gomologov)

PERIODICAL:

Zhurnal Obshchey Khimii, 1958, Vol.28, Nr 1, pp.227-230 (USSR)

ABSTRACT:

In connection with the haloidarylation reaction of the aryllic acid derivatives the authors had earlier worked out a preparative method for the synthesis of α -haloid- β -arylpropionic and β -aryl-isobutyric acids by saponification of the nitriles and esters of this acid with the aid of a mixture of formic and hydrochloric acid. This made it possible to find a general method for the synthesis of DL- β -phenylalanine and its homologues from acrylnitrile and methylmetacrylate (see the process of reaction). On direct action of ammonia and amines upon α -haloid- β -propionnitriles as a rule no aminonitriles are formed, with the exception of α -chloro- β -phenylpropion-

Card 1/3

79-1-47/63

The Haloidarylation of Unsaturated Compounds With Aromatic Diazo Compounds
X. The Synthesis of DL-Phenylalanine and Its Homologues

nitrile which yielded N, β -diphenylalanine by the influence of aniline and by subsequent saponification of aminonitrile with caustic potash. On heating of α -chloro- β -phenylpropionitrile and α -chloro- β -(p-nitrophenyl)-propionitrile with urotropine in dioxane and by further splitting of the urotropine complex with alcoholic hydrogen chloride the authors obtained hydrochlorides of phenylalanine- and p-nitrophenylalanine-ethylester. In order to find a better method for the synthesis of amino acids the α -haloid- β -arylpropionic acids were according to one of the three methods subjected to amination: 1) By conversion with a concentrated aqueous ammonia solution, 2) by conversion with liquid ammonia and finally 3) by conversion with urotropine. In this manner the authors synthesized phenylalanine (52-90%), p-methoxyphenylalanine, p-chlorophenylalanine, 2,4-dichlorophenylalanine and p-bromophenylalanine. Tyrosine with a 90% yield was obtained from p-methoxyphenylalanine. The method with liquid ammonia gives the best yields, the reaction velocity being even higher than with the use of aqueous solutions. There are 17 references, 5 of which are Slavic.

Card 2/3

79-1-47/63
The Haloidarylation of Unsaturated Compounds With Aromatic Diazo Compounds.
X. The Synthesis of DL-Phenylalanine and Its Homologues

ASSOCIATION: **Moscow State University**
(Moskovskiy gosudarstvennyy universitet)

SUBMITTED: November 26, 1956

AVAILABLE: Library of Congress

Card 3/3

1. Chemistry 2. Cyclic compounds-Chemical reactions

TERENT'YEV, A. P.

79-2-37/64

AUTHORS: Grinev, A. N., Zaytsev, I. A., Shvedov, V. I.,
Terent'yev, A. P.

TITLE: Investigations in the Field of the Quinones (Issledovaniya v oblasti khinonov).
XXII. Synthesis of Substituted Indoles (XXII. Sintez zameshchennykh indolov).

PERIODICAL: Zhurnal Obshchey Khimii, 1958, Vol. 28, Nr 2, pp. 447-452 (USSR).

ABSTRACT: It was already found that from the reaction of the imines of the acetylacetone with p-benzoquinone either substituted indoles or benzofuranes are obtained. This reaction was increased and by the condensation of the ethylether of β -aminocrotonic acid and of some of its derivatives with p-benzoquinone, 2,3-dichloro-p-benzoquinone, 2,5-dichloro-p-benzoquinone, and α -naphthoquinone the ethylethers of: the 1-(o-tolyl)-2-methyl-5-oxyindol-3-carboxylic acid, 1-cyclohexyl-2-methyl-5-oxyindol-3-carboxylic acid, 2-methyl-5-oxy-6,7-dichloroindole-3-carboxylic acid, 2-methyl-4,7-dichloro-5-oxyindole-3-carboxylic acid, 1-ethyl-2-methyl-4,7-dichloro-5-oxyindole-3-carboxylic acid and 1-phenyl-2-methyl-5-oxybenzindole-3-carboxylic acid were obtained. The methylation and benzoylization of the oxyindoles were investigated in this and previous papers, as well as the reaction of the ethyl

Card 1/2

Investigations in the Field of the Quinones.
XXII. Synthesis of Substituted Indoles.

72-2-37/64

ether of 1,2-dimethyl-5-methoxyindole-3-carboxylic acid and magnesium bromoethyl. The latter takes place evenly if a mixture of ether-benzene is used as solvent and yields, 1,2-dimethyl-3-(pentene-2-yl-3)-5-methoxyindole. Preparative and specific data are given. There are 8 references, 5 of which are Slavic.

ASSOCIATION: Moscow State University (Moskovskiy gosudarstvennyy universitet).

SUBMITTED: December 28, 1956.

AVAILABLE: Library of Congress.

Card 2/2

AUTHORS: Terent'yev, A. P., Potapov, V. M. 79-28-5-6/69

TITLE: Stereochemical Investigations (Stereokhimicheskiye issledovaniya).
 III. Schiff Bases From Optically Active α -Phenylethylamine (III. Osnovaniya Shiffa iz opticheski aktivnogo α -feniletilamina)

PERIODICAL: Zhurnal Obshchey Khimii, 1958, Vol. 28, Nr 5, pp. 1161-1166 (USSR)

ABSTRACT: Based on a few published optically active Schiff bases, e. g., such bases from the isomers of menthyl- and phenylamine (References 4,5), the authors obtained Schiff bases from the derivatives of optically active α -phenylethylamine. All details are shown in the table. Currently, a report by Nerdel (Reference 6) was published, where some such bases from α -phenylethylamine were described, some of which had already been synthesized by the authors (II, V, VII and XI). Nerdel carried out the calculations of the optical activity on benzene, alcohol, chloroform and dioxane, while the authors did so in ben-

Card 1/3

Stereochemical Investigations.

79-28-5-6/69

III. Schiff Bases From Optically Active α -Phenylethylamine

zene, methanol, acetone and dichlorethane. Thus data are only coinciding for the benzene solutions, where this is rather exactly the case; in the rest of the solutions they well duplicate one another. When considering the constants mentioned in the table, the great difference between the data found and the calculated molecular refraction was, to be expected, because according to Auvers, the exaltation of the molecular refraction for benzylamines can rise up to four units. The data in the table on the optical activity are first of all of interest for the solving of the problem when considering the influence of the character of the substituent in the aromatic nucleus on the extent of the optical rotation in the given type. The authors synthesized Schiff bases from optically active α -phenylethylamine and benzaldehyde, from 13 substituted benzaldehydes and other aldehydes, as well as from furfurol. The results obtained were used to consider the problem of the possible influence of the rotational isomers on the extent of the rotation. There are 2 tables and 13 references, 3 of which are Soviet.

Card 2/3

Stereochemical Investigations.

III. Schiff Bases From Optically Active α -Phenylethylamine

79-28-5-6/69

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)

SUBMITTED: April 8, 1957

Card 3/3

AUTHORS: Terent'yev, A. P., Gracheva, R. A.

79-28-5-7/69

TITLE: ~~Synthesis of the α -Amino Acid Through Furfuran Derivatives~~
Synthesis of the α -Amino Acid Through Furfuran Derivatives (Polucheniye α -aminokislot cherez proizvodnyye furana)

PERIODICAL: Zhurnal Obshchey Khimii, 1958, Vol. 28, Nr 5,
pp. 1167-1169 (USSR)

ABSTRACT: In order to determine the structure of the 2-methyl-1-furfurylcyclopropane synthesized by himself, Kizhner (Reference 1) subjected this compound to oxidation on which occasion the furfurane ring converted to the carboxyl. The yield of 2-methylcyclopropanecarboxylic acid reached 77%. Also Kucherov used the same method in order to prove the structure of butyl- and isobutylfurfurylcarbinols. The easiness of this conversion made the authors think of utilizing this reaction also for the synthesis of fatty acid derivatives. The easily accessible furfurol and furfurane can also serve as initial products for many compounds. Many syntheses of furfurane according to Fridel-Krafts with chlorine anhydrides and acid anhydrides were

Card 1/3

Synthesis of the α -Amino Acid Through Furfuran
Derivatives

79-28-5-7/69

described. Furfurol easily supplies the pyromucic acid and through its oxime supplies its nitrile. The furfurane derivatives can be converted to different ketones by means of organo-magnesium compounds. Based on these facts the authors make use of this reactivity of furfuranes also for the synthesis of α -amino acids, based on the capability of the furfurane ring to convert to carboxyl (see scheme). It has to be noticed that the amines as intermediate products in this reaction chain are already of interest by themselves. The described conversions were tested with three examples ($R = CH_3, C_3H_7, n - C_4H_9$). Acetylfurfurane was produced of furfurane and acetic anhydride in the presence of phosphoric acid; propyl- and butylfurfurylketones were produced of the nitrile of pyromucic acid according to Grignard (yields were 60 - 70%). The reduction of the ketone oximes to the amines with zinc in acetic acid supplied a yield of 50 - 60%. The oxidation of the benzoyl derivatives of the amines was carried out with permanganate in alkaline medium. This way alanine, norvaline and norleucine were obtained.

Card 2/3

Synthesis of the α -Amino Acid Through Furfural Derivatives 79-28-5-7/69

ned in yields of 50 - 70%.

There are 9 references, 2 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet
(Moscow State University)

SUBMITTED: May 9, 1957

Card 3/3

SOV/79-28-6-17/63

AUTHORS: Terent'yev, A. P., Volodina, M. A., Mishina, V. G.

TITLE: Synthesis and Properties of Pyrrolidine Bases (Sintez i svoystva pirrolidinovykh osnovaniy) IV. 2-Methyl-N- β -Aminoethylpyrrolidine and Some of Its Conversions (IV. 2-Metil-N- β -amincetilpirrolidin i nekotoryye yego prevrashcheniya)

PERIODICAL: Zhurnal obshchey khimii, 1958, Vol. 28, Nr 6, pp. 1516-1520 (USSR)

ABSTRACT: In earlier publications (Refs 1 - 3) the authors showed that γ -ketcalcohols can serve as accessible initial material for pyrrolidine and pyrroline bases especially since some of the compounds obtained show physiologic activity. This caused the authors to investigate the synthesis of 2-methyl-N- β -aminoethylpyrrolidine as well as its properties. On the action of γ -acetopropylalcohol (I) on N,N'-ethylene formamide besides 2,2-dimethyl-N,N'-dipyrrolidine-ethane (III) the 2-methyl-N- β -aminoethylpyrrolidine (II) (60 % yield) was obtained. It shows a high physiologic activity (see scheme 1). The conversion of compound (II) with furfurole yielded 2-

Card 1/3

SOV/79-28-6-17/63

Synthesis and Properties of Pyrrolidine Bases. IV. 2-Methyl-N- β -Amino-ethylpyrrolidine and Some of Its Conversions

-methyl-N- β -furfurylideneaminoethylpyrrolidine (IV) which by reduction with magnesium in methylalcohol was converted to compound (V). This product by a treatment with benzylchloride and 2-methyl- β -chloroethylpyrrolidine lead to the following tertiary amines: N-2-furfuryl-N-benzyl- β -(2-methylpyrrolidyl-1)-ethylamine (VI) and N-2-furfuryl-N-(2-methylpyrrolidyl-1-ethyl)- β -(2-methylpyrrolidyl-1)ethylamine (VII). On the action of phenyl isocyanate on (V) the N-phenyl-N'-2-(2-methyl-N-pyrrolidyl)-ethyl-N'-furfurylthiourea (XII) was obtained. The conversion of ethylene- and propylene oxide on (II) supplied amino alcohols (VIII) and (IX) which again were converted to their corresponding β -chloroalkylamines (X) and (XI). All conversions carried out are mentioned in scheme 2. There are 8 references, 4 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)

SUBMITTED: April 6, 1957
Card 2/3

SOV/79-28-6-17/63

Synthesis and Properties of Pyrrolidine Bases. IV. 2-Methyl-N- β -Amino-ethylpyrrolidine and Some of Its Conversions

1. Cyclic compounds--Synthesis

Card 3/3

SOV/73-28-7-26/64

AUTHORS: Grinev, A. M., Venevtseva, N. K., Merent'ev, A. P.

TITLE: The Alyklation of the Substituted 5-Oxybenzofurfuranes. The Synthesis of the New Plant Growth Stimulators (Alkilirovaniye zameshchennykh 5-oksibenzofuranov; sintez novykh stimulyatorov rosta rasteniy)

PERIODICAL: Zhurnal obshchey khimii, 1958, Vol. 28, Nr 7, pp. 1850-1853 (USSR)

ABSTRACT: The authors succeeded in elaborating a method of the synthesis of the substituted 5-oxybenzofurfuranes by the condensation of p-quinone with the esters of the β -keto acids (Refs 1 - 5), which practically made accessible a series of 5-oxybenzofurfurane derivatives. As a proof for the structure of the obtained compounds papers already existed on the methylation of some of these compounds with dimethyl sulfate, with either derivatives of the 5-methoxybenzofurfurane-3-carboxylic acids (Refs 3, 5), or their esters having been obtained, depending on the conditions prevailing (Ref 6). The compounds (I), (II), (III), (IV) and (V) were synthesized by the authors by the conversion of the 5-oxybenzofurfurane with dimethylsulfate

Card 1/2

SOV/79-28-7-26/64

The Alkylation of the Substituted 5-Oxybenzofurfuranes. The Synthesis of the New Plant Growth Stimulators

in alkaline medium in the presence of dioxane. In the hydrolysis of the esters (I), (III), (V) and (VI) with alcoholate the furfuranes (VII), (VIII), (IX) and (X) were obtained. The acetic acids (XI) and (XII) were obtained as final products of the alkylation of the already earlier (Ref 1) synthesized oxyacids of the benzofurfurane series with chloroacetic acid. The potassium salts of the acids (VII) - (XII) proved to be highly effective plant growth stimulators as was shown by the evidence obtained by N. A. Bazilevskaya in the M. G. U. Botanical Garden. The results of the biological experiments with these products will be published later. There are 6 references, 6 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)

SUBMITTED: June 18, 1957

Card 2/2

SOV/79-28-7-27/64

AUTHORS: Grinev, A. N., Zaytsev, I. A., Venevtseva, N. K.,
Terent'yev, A. P.

TITLE: A New Method for the Synthesis of Substituted Benzofurfurane-
and Indole From Esters of the Benzofurfurane- and Indole- β -
Carboxylic Acids (Novyy metod polucheniya zameshchennykh
benzofuranov i indolov iz efirov benzofuran-i indol- β -kar-
bonovykh kislot)

PERIODICAL: Zhurnal obshchey khimii, 1958, Vol. 28, Nr 7, pp. 1853-1855
(USSR)

ABSTRACT: In many cases the esters of the substituted benzofurfurane-
and indole- β -carboxylic acids were ~~later~~ more accessible than
the benzofurfuranes and indoles as such. The carboxyl group
in these compounds is closely attached to them so that their
cleavage demands strict conditions which lead to a great
loss in substance (Refs 1, 2). In the experiments carried
out to remove the carboxyl group from such and similar com-
pounds the authors either met with difficulties, or the
yields were too small (Refs 3 - 6). The synthesis of the
N-alkyl- and N-aryl substituted indoles with a free β -posi-

Card 1/3

SOV/79-28-7-27/64

A New Method of the Synthesis of Substituted Benzofurfurane- and Indole
From Esters of the Benzofurfurane- and Indole- β -Carboxylic Acids

tion could not be realized in these experiments at all. The authors by means of some examples suggest a convenient method for the cleavage of the esters of the benzofurfurane- and indole- β -carboxylic acids by their heating with equimolecular quantities of sulfuric or phosphoric acid in glacial acetic acid solution. The reaction takes place according to the mentioned scheme. Thus the authors by the action of sulfuric acid on the corresponding esters obtained the furfuranes (I), (II), (III) and the indole (IV), and by the action of phosphoric acid the indoles (V) and (VI). The 2-phenyl-3-carboxy-6,7-dichlorobenzofurfurane-5-oxyacetic acid was also subjected to the cleavage of sulfuric acid, with the compound (VII) having been obtained. There are 9 references, 6 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet
(Moscow State University)

SUBMITTED: June 18, 1957
Card 2/3

1. Furan derivatives—Synthesis
2. Substitution reactions
3. Plants—Growth
4. Growth substances—Synthesis

SOV/79-28-7-27/64
A New Method for the Synthesis of Substituted Benzofurfurane- and Indole
From Esters of the Benzofurfurane- and Indole- β -Carboxylic Acids

1. Furan derivatives--Synthesis 2. Indoles--Synthesis 3. Carboxylic acid
esters--Chemical reactions 4. Substitution reactions 5. Carboxyl radicals
--Chemical effects

Card 3/3

SOV/79-28-7-28/64

AUTHORS: Grinev, A. N., Venevtseva, N. K., Terent'yev, A. P.

TITLE: Investigations in the Field of Quinones (Issledovaniya v oblasti khinonov) XXIII. The Investigation of the Condensation of p-Benzoquinone and 2,3-Dichloroquinone With Acetic Ester and Its Analogs (XXIII. Izucheniye kondensatsii p-benzo-khinona i 2,3-dikhlorokhinona s atsetouksusnym efirov i yego analogami)

PERIODICAL: Zhurnal obshchey khimii, 1958, Vol. 28, Nr 7, pp. 1856-1864 (USSR)

ABSTRACT: In the present paper the authors carried out the condensation of the p-benzoquinone with acetic ester at lower temperatures than was the case in their earlier papers (Refs 1 - 5); the results deviated from those earlier obtained. At 80-85° and at a low concentration of p-benzoquinone in the reaction mixture mainly (at low concentrations even exclusively) a benzofurfurane derivative (formula I) is obtained. At 41-45° at low concentrations the esters (II) and (III) are formed. When the reaction takes place at 38° only the substituted

Card 1/3

NOV/79-28-7-28/64
Investigations in the Field of Quinones. XXIII. The Investigation of the
Condensation of p-Benzoquinone and 2,3-Dichloroquinone With Acetic Ester
and Its Analogs

benzofurfurylacetic ester (II) is obtained without admixture of (III). The substituted ester (II) on boiling its solutions in alcohol and other solvents easily converts to (III). When the reaction is carried out at low temperatures it is possible to separate also a product with a melting point of 206,5 - 207° besides (II) from the reaction products when the relative concentration of p-benzoquinone is increased; according to the analysis and the qualitative reactions carried out this product must be given the formula (IV). From the experiments carried out it may be concluded that the one or the other direction of the condensation of the quinones with esters of the β -keto acids, which may be easily controlled by the comparison of the yields of the derivatives of benzofurfurane and benzodifurfurane, does not only depend on the concentration of quinone in the reaction mixture but also to a considerable degree on temperature. Besides these factors mentioned also the nature of the reagent acting in the reaction with the quinones influences the yield of the derivatives of benzofurfurane and benzodifurfurane. There are 8 references.

Card 2/3

Investigations in the field of quinones. XIII. The Inversion of the
Condensation of p-Benzoquinone and 2,6-Dichloroquinone with Acetic Ester
and Its analogs

7 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet
(Moscow State University)

SUBMITTED: June 21, 1957

1. Benzoquinones--Chemical reactions 2. Chloroquinone--Chemical
reactions 3. Condensation reactions 4. Acetic acid esters--Chemical
reactions

Card 3/3

AUTHORS: Terent'yev, A. P., Mogilyanskiy, Ya. D. SOV/79-28-7-52/64

TITLE: A Pyridine Complex - Cuprous Chloride as Catalyst of Self-Oxidation (Kompleks pridin-polukloristaya med' kak katalizator samookisleniya) I. The Synthesis of an Azo Compound From Primary Aromatic Amines (I. Polucheniye azosoyedineniya iz pervichnykh aromaticheskikh aminov)

PERIODICAL: Zhurnal obshchey khimii, 1958, Vol 28, Nr 7, pp 1959 - 1962 (USSR)

ABSTRACT: In continuation of the many catalytic methods of the oxidation of aniline with air for the formation of azo benzene the authors found that the oxidation of the aromatic amines dissolved in pyridine with air or oxygen in the presence of cuprous chloride in some cases leads to the smooth formation of azo compounds, with very few side products being formed. p-azotoluene, for instance, is practically obtained in a quantitative yield. Also the oxidation formation of the p,p'-diaminoazophenyl from benzidine (yield 72%) takes place easily. Thus, Willstätter and Kalb(Wil'shteter, Kal'b)(Ref 4) as the first obtained only 15%.

Card 1/3

A Pyridine Complex - Cuprous Chloride as Catalyst of Self-Oxidation. I. The Synthesis of an Azo Compound From Primary Aromatic Amines SOV/79-28-7-52/64

When using amines (like aniline, p arisidine) a considerable resinification takes place on heating, which, however, to a great extent, can be avoided at room temperature in the case of diluted solutions and pure oxygen. The amount of Cu_2Cl_2 used in the oxidation exerts only little influence on the yields. The catalyst in this reaction is the complex $\text{Cu}_2\text{Cl}_2 \cdot 6\text{Py}$ (Py=pyridine) which easily binds oxygen and also easily separates it for the dehydration of the amine. Cuprous chloride can not be substituted by other salts in this reaction, nor can the pyridine be substituted by other solvents. There are 1 table and 6 references, 1 of which is Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet i Vitebskiy gosudarstvennyy pedagogicheskiy institut (Moscow State University and Vitebsk State Pedagogical Institute)

SUBMITTED: June 5, 1957
Card 2/3

A Pyridine Complex - Cuprous Chloride as Catalyst of SOV/79-28-7-52/64
Self-Oxidation. I. The Synthesis of an Azo Compound From Primary Aromatic
Amines

1. Nitrogen compounds (Organic)--Synthesis 2. Amines--Oxidation 3. Copper
chlorides--Catalytic properties 4. Pyridines--Solvent action

Card 3/3

SCV/79-28-12-37/41

AUTHORS:

Potapov, V. M., Terent'yev, A. P.

TITLE:

Stereochemical Investigations (Stereokhimicheskiye issledovaniya) IV. Schiff's Bases From Optically Active α -Benzyl-Ethyl Amine (IV. Osnovaniya Shiffa iz opticheski aktivnogo α -benzil-etilamina)

PERIODICAL:

Zhurnal obshchey khimii, 1958, Vol 28, Nr 12, pp 3323 - 3328 (USSR)

ABSTRACT:

In their previous paper (Ref 1) the authors described several Schiff's bases of the first series from optically active α -phenyl-ethyl amine (I). The specific behavior of these compounds with respect to optical rotation caused the authors to synthesize and investigate the optical activity of the second series of Schiff's bases. They started from the optically active α -benzyl-ethyl amine (II), which differs from (I) in the presence of the CH_2 group between the benzene nucleus and the asymmetric center. The synthesis of racemate (II) was carried out by the reducing amination of phenyl acetone according to Leukart (Leykart). The synthesis of this initial product requires much time. The catalytic condensation of phenyl acetic acid with ordinary acetic acid is the most

Card 1/3

Stereochemical Investigations. IV. Schiff's Bases From SOV/79-28-12-37/41
Optically Active α -Benzyl-Ethyl Amine

convenient. The cleavage of (II) into the optical antipodes can be obtained by the action of d-tartaric acid in alcohol solution (Refs 2,4). In the place of this acid also the earlier used acid sulfate of menthol can be applied, thus separating (-) (II), whereas in the cleavage with d-tartaric acid the diastereoisomer is separated which contains (+)(II). In this way the two antipodes can be obtained with either reagent. The condensation of (II) with a substituted benzaldehyde takes place easily without solvent, or in benzene already in the water bath. The constants of the purified products synthesized are given in the experimental part, the data on the optical activity in table 1. The optical properties of this series of Schiff's bases differ from those of the series investigated earlier. The experimental material collected on the optical activity of these bases is not sufficient to draw comprehensive conclusions from their detected characteristic features. The optical activity of these bases was, besides in benzene, determined also in methanol, acetone, dichloro ethane, and heptene.

Card 2/3

Stereochemical Investigations. IV. Schiff's Bases From SOV/79-28-12-37/41
Optically Active α -Benzyl-Ethyl Amine

There are 1 table and 11 references, 5 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)

SUBMITTED: November 4, 1957

Card 3/3

Terent'yev, A.P. 20-2-27/60

AUTHORS: Terent'yev, A. P. Corresponding Member AN USSR, Preobrazhenskaya,
M. N.

TITLE: A New Method for the Synthesis of Indoles Substituted in the Benzene Ring (Novyy metod sinteza indolov, zameshchennykh v benzol'nom yadre)

PERIODICAL: Doklady AN SSSR, 1958, Vol. 118, Nr 2, pp. 302 - 305 (USSR)

ABSTRACT: In connection with the discovery of serotonin and with the search for its antimetabolites a number of works on the substances mentioned in the title was published. But their synthesis is very complicated. Three of such methods together with the difficulties occurring in them are cited. The new method suggested here is based on the reduction of indole (or its homologue), which leads to the production of indoline, an aromatic amine. The substituents are then introduced into the benzene nucleus by means of ordinary reactions. The substituted indoline is dehydrated, which leads to the production of a corresponding substituted indole. The authors produced 6-nitro-1-methyl-indole, 6-amino-1-methyl-indole as well as the benzoyl- and phthalyl-derivative of the latter. The methylation of the indole and the production of 1-methyl-indoline I were brought about by a method described in publications (references 1, 2). The latter substance was nitrated under analogous conditions

Card 1/3

20-2-27/60

A New Method for the Synthesis of Indoles Substituted in the Benzene Ring

as dimethyl-toluidine (reference 3) and 6-nitro-1-methyl-indoline II isolated. The latter compound was dehydrated (analogous to reference 4) by boiling in xylene with chloranil. The yield of 6-nitro-methyl-indole III amounted to 61 % relative to indole and 72 % relative to 1-methylindole. By oxidation of substance II with chromic acid they obtained nitro-methyl-isatin IV with a melting point highly different from that of 5-nitro-1-methyl-isatin described in publications (reference 5). Thus the nitro group in the produced nitro-indole has not the position 5. The authors are of the opinion that the substance synthesized by them is 6-nitro-1-methyl-indole (corresponding to reference 7). By reduction of this compound in the presence of nickel of Reney they obtained 6-amino-1-methylindole V with a 49 % yield calculated on indole. 6-amino-1-methyl-indole was also produced in another way: by reduction of 6-nitro-1-methyl-indoline II by means of tin chloride they obtained 6-amino-1-methyl-indoline VI. Heated with phthal-anhydride this substance yielded 6-phthalimino-1-methyl-indoline VII. 6-phthalimino-1-methyl-indole VIII after heating with hydrazine-hydrate yielded 6-amino-1-methyl-indole V. The two benzoyl-derivatives from V, which was produced from 6-nitro-1-methylindole III, and that from 6-phthalimino-1-methylindole VIII were identical. 6-benzoyl-amino-1-methylindole X was also obtained by dehydration of 6-ben-

Card 2/3

20-2-27/60

A New Method for the Synthesis of Indoles Substituted in the Benzene Ring;

zoyl-amino-1-methyl-indoline. An experimental part with the usual data is given. There are 8 references, none of which is Slavic.

SUBMITTED: July 26, 1957

AVAILABLE: Library of Congress

Card 3/3

NOV/20-121-3-24/47

AUTHORS: Tarent'ev, A. I., Corresponding Member, Academy of Sciences,
USSR, Preobrazhenskaya, N. N.

TITLE: Synthesis of 5-Mercapto Indole and 5-Mercapto-1-Methyl Indole
Derivatives (Sintez proizvodnykh 5-merkaptindola i 5-merkapt-
1-metilindola)

PERIODICAL: Zhurnal khimicheskikh nauk USSR, 1958, Vol. 121, Nr 3, pp. 481-484
(USSR)

ABSTRACT: In connection with the high physiological activity of various
indole compounds containing a hydroxy- (or alkoxy) group in
the benzene nucleus the synthesis and the investigation of
the derivatives mentioned in the title are very interesting.
Hitherto corresponding substituted indoles have not been
described. It is difficult to produce them according to
Fischer (Fisher), Heyser and others. By new methods of
synthesis worked out by the authors (Ref.1) several derivatives
mentioned in the title could be produced. Indole or 1-methyl
indole was reduced to a corresponding dihydroindole (indoline).
Indoline can be thiocyanated. The obtained indoline thiocyanate

Card 1/5

S.V./Po-121-3-14/47

Synthesis of 5-Mercapto Indole and 5-Mercapto-1-Methyl Indole Derivatives

was dehydrated to indole thiocyanate. Thus 5-indoline thio-
cyanate (I), 5-thiocyanate-1-methyl indoline (II), 5-indole
thiocyanate (III) and 5-thiocyanate-1-methyl indole (IV) were
produced. The yield of (III) computed for initial indole
amounts to 57 % of (IV) - 54 %. The thiocyanogen group enters
position 5 of the indole cycle (Ref 2). In the case of bromina-
tion of indolines a hydrogen atom is replaced too which is
attached to the fifth carbon atom. In the course of bromination
of 1-methyl indoline 5-bromo-1-methyl indoline was obtained
which was dehydrated to 5-bromo-1-methyl indole. By oxidation
of the latter with chromic acid 5-bromo-1-methyl isatine
was isolated. It agreed with the substance which was synthesized
from isatine. By being boiled with alkalies thiocyanogen com-
pounds form disulfides. By reduction and following benzoyla-
tion (II) 5-benzoyl-mercapto-1-methyl indoline (II) was syn-
thesized. Its dehydration by anil chloride in xylene yielded
in 5-benzoyl-mercapto-1-methyl indole (III). The work with
these substances demands a lot of precautionary measures
since they cause severe dermatitis the symptoms of which do
not show before 2-3 weeks. There are 1 figure and 2 references,
2 of which are Soviet.

Card 2/3

SOV/2c-121-3-24/27

Synthesis of 5-Mercapto Indole and 5-Mercapto-1-Methyl Indole Derivatives

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova
(Moscow State University imeni M. V. Lomonosov)

SUBMITTED: March 19, 1958

Card 3/3

AUTHORS: Grinev, A. N., Yernakova, V. N., SOV/20-121-5-27/50
Terent'yev, A. P., Corresponding Member, AS USSR

TITLE: Synthesis of 1-Benzyl-2-Methyl-5-Methoxy Tryptamine (Sintez
1-benzil-2-metil-5-metoksitriptamina)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol. 121, Nr 5,
pp. 862-864 (USSR)

ABSTRACT: E. Shaw (Ref 1, 1955) synthesized 1-benzyl-2-methyl-5-methoxy-
-indole-3- acetic acid from the substituted phenyl-hydrazone
of the methyl ether of levulinic acid by means of the Fischer
(Fisher) reaction. Owing to the reduction of the amide of this
acid by means of lithium-aluminium hydride, 1-benzyl-2-methyl-
-5-methoxy tryptamine (VII) was produced. Clinical investiga-
tions have shown that the latter substance being a benzyl ana-
log of serotonin (BAS) has a higher physiological activity
than its antimetabolite (Refs 2 - 5). A scheme of the synthe-
sis of the substance (VII) carried out by the authors is
given. The condensation of p-benzoquinone with the ethyl-ether
of the N-benzyl- β -amino-crotonic acid with respect to
1-benzyl-2-methyl-3-carbethoxy-5-oxy indole (I) has only been

Card 1/2

Synthesis of 1-Benzyl-2-Methyl-5-Methoxy Tryptamine

SOV/20-121-5-27/50

achieved under conditions which deviate from the conditions of production of other nitrogen-substituted 5-oxy indolines (Refs 6 - 9). The methylation of the oxy-group of indole (I) takes place smoothly under the influence of dimethyl sulfate in an alkaline medium. The splitting off of the carbethoxy group from 1-benzyl-2-methyl-3-carbethoxy-5-methoxy indole (II) most probably passes through a stage of formation of a form of indoline in connection with an action of H_2CO_4 in acetic acid solution. The other stages of the process are carried out according to methods analogous to those given in publications (Refs 10,11).

There are 11 references, 5 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova
(Moscow State University imeni M.V. Lomonosov)

SUBMITTED: March 21, 1958

Carl 2

SOURCE: Documentary: Newsletter, Issue No. 2, issued by the Center for Documentation and Communication Research, School of Library Science, Western Reserve University, Cleveland 6, Ohio.

1. To date, 4) papers, from 10 countries, have been submitted for the subject Conference. They include:

USSR

AKHAROVA, J.S., Linguistics Institute, USSR Academy of Sciences, Moscow - "On the machine languages as 'auxiliary codes' for 'realist' languages"
 ANTONOV, B.D., Experimental Laboratory of Machine Translation, Leningrad University - "Report on the investigation of the machine translation of machine translation (Leningrad University)";
 (2) "Universal code of science and machine languages"
 CHERNIK, V. P., LAVRENT'YEV, G. A., and ZILAKOVA, E. V., Institute of Scientific Information, USSR Academy of Sciences, Moscow - "Experimental information language for mechanical translation of searching of scientific and technical literature"
 ZILAKOVA, E. V., and YEREM'YEV, A. P., Moscow State University - "Manual translation"

Report to be submitted for the Intl. Conference on Machine Learning and Translation, (for Standards on a Common Language), Cleveland, Ohio, 6-12 September 1979.

SOV/79-29-1-67/74

AUTHORS: Terent'yev, A. P., Preobrazhenskaya, M. N.

TITLE: Method of Introducing the Substituents Into the Benzene Nucleus of Indole (Metod vvedeniya zamestiteley v benzol'noye yadro indola). II. Synthesis of 5-Bromo-1-methyl Indole and 5-Amino-1-methyl Indole (II. Polucheniye 5-brom-1-metilindola i 5-amino-1-metilindola)

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 1, pp 317-323 (USSR)

ABSTRACT: The synthesis of the indoles substituted in the benzene nucleus as suggested by the authors is based upon the "temporary elimination" of the most active 2,3-positions of indole from the reaction. Thus it is possible to avoid until the last stage the synthetically unpleasant properties characteristic of indole as far as the reactions are carried out with typical aromatic amines. In this case 1-methyl indole was the initial product which was obtained by methylation of indole with dimethyl sulfate in liquid ammonia (yield 95%) (Ref 15). The reduction of 1-methyl indole led to 1-methyl indoline (I) (80%). By bromination of the sulfate of (I) in glacial acetic acid 5-bromo-1-methyl indoline (II) was obtained. In the case of heating with

Card 1/2

SOV/79-29-1-67/74

Method of Introducing the Substituents Into the Benzene Nucleus of Indole.

II. Synthesis of 5-Bromo-1-methyl Indole and 5-Amino-1-methyl Indole

chloro aniline in xylene the result was 5-bromo-1-methyl indole (III) (27% yield, calculated for indole). For the structural proof of compound (III) an oxidation with chromic acid was carried out under separation of 5-bromo-1-methyl isatin (IV) which was also obtained according to references 16,17. In contrast with dimethyl-o-toluidine, (I) forms a compound with sulfanilic acid in a mineral acid medium, an azo-dye (V) which is difficultly soluble in water, in an alkali medium, however, an easily soluble azo salt (VI). The reduction of (V) or (VI) led to (VII) (Scheme 3). The heating of (VII) with phthalic anhydride yielded (VIII) which led to (IX) by dehydrogenation of chloro aniline. In the case of heating the latter with hydrazine hydrate the result was 5-amino-1-methyl indole (X) in a yield of 17.5%, calculated for indole. There are 19 references, 2 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)

SUBMITTED: November 28, 1957
Card 2/2

LITVIN, K.I.; starshiy inzhener; RUKLADZE, Ye.G.; TERENT'YEV, A.P.

Determination of barium by the method of "nascent reagents."
Nauch. trudy MGI no.27:97-113 '59. (MIRA 14:6)
(Barium--Analysis)
(Chemical tests and reagents)

5(3)

SOV/156-59-1-33/54

AUTHORS: Terent'yev, A. P., Rode, V. V., Volodina, M. A.

TITLE: The Dithiocarbamates of Certain Nitrogenous Heterocyclic Compounds (Ditiokarbamaty nekotorykh azotsoderzhashchikh geterotsiklicheskikh soyedineniy). Intracomplex Copper Dithiocarbamates (Vnutrikompleksnyye mednyye ditiokarbamaty)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Khimiya i khimicheskaya tekhnologiya, 1959, Nr 1, pp 129 - 133 (USSR)

ABSTRACT: The problem of the structure of the dithiocarbamates is still in dispute. The authors synthesized and investigated several dithiocarbamates of the homologues of pyrrolidine, piperidine, and their derivatives, as well as of the products of their dehydration. Sodium salts are formed only if the nitrogenous heterocyclic compound is saturated. Copper salts, however, were obtained from all of the compounds investigated. The spectra of all the copper compounds produced, as well as the spectra of certain sodium compounds were photographed. In the sodium compounds, both spectrum and numerous properties point to an ion structure. The resulting sodium salts of the

Card 1/4

The Dithiocarbamates of Certain Nitrogenous Heterocyclic Compounds. Intracomplex Copper Dithiocarbamates SOV/156-00-1-10/54

dithiocarbamic acid of saturated heterocyclic compounds are white crystalline substances that solve well in water and alcohol, but are insoluble in organic solvents such as ether, benzene, chloroform, carbon tetrachloride, and ethyl acetate. Sodium dithiocarbamates were obtained from : 2-methyl-pyrrolidine, 2,5-dimethyl-pyrrolidine, 2,2-pentamethylene-pyrrolidine, piperidine, 3,3-dimethyl-2-isopropyl-piperidine, 3,4-diphenyl-piperidine. (The spectral absorption maxima, decomposition temperatures, and yields are presented in tables and diagrams). All of the copper compounds are water-insoluble, difficultly soluble in alcohol, but solve well in the above-mentioned organic solvents. They are blackish-brown, as are their solutions in the organic solvents, the solutions being occasionally even more intensively colored. The copper dithiocarbamates show good stability. They were not affected by acetic or hydrochloric acids. Nitric acid decomposes them after prolonged standing or on heating. The spectra of the copper compounds show certain governing rules according to the individual ring substituents. The double bonds in the nitrogenous heterocyclic ring are also spectrally

Card 2/4

The Dithiocarbamates of Certain Nitrogenous Heterocyclic Compounds. Intracomplex Copper Dithiocarbamates SOV/196-99-1-33/54

characterized. Copper dithio-carbamates were obtained from :
 2-methyl-pyrrolidine, 2,5-dimethyl-pyrrolidine, 2,2-penta-
 methylene-pyrrolidine, piperidine, 3,3-dimethyl-2-isopropyl-
 piperidine, 3,4-diphenyl-piperidine, 2-methyl- Δ^2 -pyrroline,
 2,5-dimethyl- Δ^2 -pyrroline, 2,3,5-trimethyl- Δ^2 -pyrroline,
 3,3-dimethyl-2-isopropyl- Δ^4 -pyrroline, pyrrole, 2-methyl-
 pyrrole, 2,4-dimethyl-pyrrole, 2,4-dimethyl-3,5-dicarbethoxy-
 pyrrole. (Absorption maxima, decomposition temperatures,
 copper content, and yields are presented in tables and dia-
 grams). As the spectral absorption maxima are situated at
 420 - 440 m μ , one will have to conclude to an intracomplex
 structure. There are 2 figures, 2 tables, and 20 references,
 4 of which are Soviet.

Card 3/4

The Dithiocarbamates of Certain Nitrogenous Heterocyclic
Compounds. Intracomplex Copper Dithiocarbamates

ASSOCIATION: Kafedra organicheskoy khimii Moskovskogo gosudarstvennogo
universiteta im. M. V. Lomonosova (Chair of Organic
Chemistry of Moscow State University imeni M. V. Lomonosov)

SUBMITTED: June 16, 1958

Card 4/4

TERENT'YEV, A.P.

S.V. Syavtsillo, Ye.A. Bondarevskaya, A.P. Kreshkov, D.M. Luskina, A.P. Terent'yev, V.T. Shemyatenskova, and L.M. Shtifman, "The Analysis Methods of Monomer and Polymer Compounds."

Report presented at the Second All-Union Conference on the Chemistry and Practical Application of Silicon-Organic Compounds held in Leningrad from 25-27 September 1958.
Zhurnal prikladnoy khimii, 1959, Nr 1, pp 238-240 (USSR)

5(2,3)
AUTHORS:

Terent'yev, A. P., Fedoseyev, P. N.,
Ivashova, N. P.

SOV/153-2-1-11/25

TITLE:

The Employment of Alkaline-earth Metals in Organic
Elemental Analysis (Primeneniye shchelochno-zemel'nykh
metallov v organicheskom elementarnom analize)

PERIODICAL:

Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i khimicheskaya
tekhnologiya, 1959, Vol 2, Nr 1, pp 54-58 (USSR)

ABSTRACT:

The determination of nitrogen, sulphur, and halogens is very
important for practical analysis in organic chemistry. Long
since chemists have devoted attention to the employment of the
afore-mentioned metals for this purpose (Refs 1,2). Alkali
metals exhibited several deficiencies in this connection
(Refs 2-5). In this article the authors give a description
of a qualitative determination of nitrogen, sulphur, and
halogens in organic substances, wherein metallic magnesium and
calcium are used. Table 1 shows the fixable minimum (γ) in
the determination of the individual elements (N, S, halogen, and
C) by means of Mg or Ca. It results therefrom that calcium
is suited for a qualitative analysis of the afore-mentioned
elements. The advantage afforded in the quantitative analysis

Card 1/2

The Employment of Alkaline-earth Metals in
Organic Elemental Analysis

SOV/153-2-1-11/25

by the calcium method as against the magnesium method are indicated in table 2. These are the substances in which the elements mentioned were determined: α -phenyl-N-methyl-phenylene-thiazine perchlorate, sulfanilic acid, acridine, aminopyridine, hexachloro-ethane, and mercapto-benzothiazole. However, the properties of metallic magnesium (easily accessible, comfortable work, and low specific weight) favor the application of the magnesium method in addition to the calcium method. There are 2 tables and 7 references, 4 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet; Nikolayevskiy korablestroitel'nyy institut i Odesskiy institut inzhenerov morskogo flota (Moscow State University, Nikolayev Ship-building Institute, and Odessa Institute for Engineers of the Sea-going Fleet)

SUBMITTED: November 4, 1957

Card 2/2

5(2), 5(3)
AUTHORS:

SOV/156-59-2-22/48
Terent'yev, A. P., Obtemperanskaya, S. I., Dolgikh, V. A.

TITLE:

The Qualitative Determination of Sulphur, Halogens, Carbon, Phosphorus, Arsenic, Antimony and Bismuth in Organic Compounds by Means of Magnesium Nitride (Kachestvennoye opredeleniye sery, galoidov, ugleroda, fosfora, mysh'yaka, sur'my i vis-muta v organicheskikh soyedineniyakh pri pomoshchi nitrida magniya)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Khimiya i khimicheskaya tekhnologiya, 1959, Nr 2, pp 305-306 (USSR)

ABSTRACT:

The determination is based upon the reducing decomposition of the organic substance by magnesium nitride (Mg_3N_2) at 650-800°. In this connection the halogens form magnesium-halogen compounds, sulphur is partly separated as hydrogen sulphide, partly it forms magnesium sulphide; arsenic, antimony and bismuth are partly precipitated on the walls in elementary form, partly they form arsenide, antimonide and bismuthide together with magnesium; phosphorus forms magnesium phosphide and carbon is separated as coal and carbon black after acidification with nitric acid. The individual elements are determined according to the usual qualitative methods.

Card 1/2

SOV/156-59-2-22/48

The Qualitative Determination of Sulphur, Halogens, Carbon, Phosphorus, Arsenic, Antimony and Bismuth in Organic Compounds by Means of Magnesium Nitride

There is 1 Soviet reference.

PRESENTED BY: Kafedra organicheskoy khimii Moskovskogo gosudarstvennogo universiteta im. M. V. Lomonosova
(Chair of Organic Chemistry, Moscow State University imeni M. V. Lomonosov)

SUBMITTED: November 28, 1958

Card 2/2

SOV/63-4-2-16/39

5(0)

AUTHORS: Terent'yev, A.P., Corresponding Member of the AS USSR, Terent'yeva, Yev.A.,
Candidate of Chemical Sciences

TITLE: Achievements of Organic Elementary Analysis

PERIODICAL: Khimicheskaya nauka i promyshlennost', 1959, Vol 4, Nr 2,
pp 242-249 (USSR)

ABSTRACT: In organic chemistry fast methods for the analysis of small quantities are necessary. In the analysis of carbon and hydrogen a tube with a universal filling consisting of various catalysts, oxidants and sorbents is used. It has been proposed, however, to replace this filling by silver vanadate, etc, which catalyzes oxidation, lowers the temperature of decomposition and absorbs obstructing products [Ref 7]. A new method is the preliminary pyrolysis of the sample in a quartz test tube, introduced by Korshun [Ref 16, 17]. The process takes place in an oxygen stream at 900°C. It permits the analysis of 3-5 elements in one sample [Ref 18]. The absorption of oxides is often carried out by $K_2Cr_2O_7$ and concentrated sulfuric acid outside of the tube [Ref 28]. There is a trend to automate the determination of C and H [Ref 44-48]. Kozhukov and Unterzaucher [Ref 49-52] developed a micromethod for the direct de-

Card 1/4

Achievements of Organic Elementary Analysis

SOV/63-4-2-16/39

termination of oxygen in a stream of nitrogen and the transformation of the decomposition products into carbon dioxide by means of carbon black of 1,150°C and iodine pentoxide. In another method the sample is decomposed with coal and strontium oxide [Ref 70]. Nitrogen is determined by vacuum pyrolysis [Ref 31-47]. The tube is filled by copper oxide. The nitrogen is finally measured in a nitrogen-meter. The sample may be heated together with magnesium powder which method transforms nitrogen compounds into magnesium nitride [Ref 86]. A variant of the hydration method consists in pyrolytic decomposition of the sample in a stream of hydrogen and the use of an iron catalyst [Ref 91]. Sulfur is determined by oxidation or reduction. In the first case the oxidation products are transformed into the SO_4 -ion by metallic silver [Ref 95-99]. Korshun has shown that at low temperatures of 400 - 450°C silver is quickly consumed. The SO_4 -ion is weighed in the form of Ag_2SO_4 or in organic and inorganic bases [Ref 111, 112]. In the reduction methods sulfur is decomposed in a stream of hydrogen with the formation of hydrogen sulfide [Ref 119], in the presence of metallic calcium [Ref 120, 121], etc. In hydrocarbons sulfur may be determined directly by means of X-rays [Ref 125]. In the pyrolysis of halide-containing organic compounds halide derivatives are formed which act as inhibitors in the oxidation of carbon monoxide which lowers the measured results. A

Card 2/4

Achievements of Organic Elementary Analysis

SOV/63-4-2-16/39

platinum contact or the adsorption on silver [Ref 127] is therefore recommended. Stepanov proposed a 15% solution of ethylene glycol in isobutyl alcohol as solvent [Ref 128]. The fusion of halides with calcium or other metals at 800°C permits the simultaneous separation of 2 - 3 halides [Ref 132, 165]. Fedoseyev and Sobko proposed an "elimination" method in which the light halides are eliminated by the heavy halides from the adsorbents, potassium bromide and iodide [Ref 133, 134]. Fluorine may be determined by thorimetric titration [Ref 132, 139]. "Moist" burning, i.e. oxidation by means of oxidants, like KMnO_4 , CrO_3 , is used in the analysis of organic compounds containing metals. Chromic acid and its salts dissolved in sulfuric and phosphoric acids are oxidants used in biochemistry, for the determination of C^{14} , etc. In some cases complete oxidation may be obtained by additional dry burning. This method is applied to the analysis of complex organic compounds [Ref 161].

Card 3/4

Achievements of Organic Elementary Analysis

SOV/63-4-2-16/39

There are 170 references, 48 of which are Soviet, 65 English, 43 German, 6 Japanese, 4 French, 2 Czechoslovak, 1 Canadian and 1 Swiss.

Card 4/4

5(3)

SOV/63-4-2-31/39

AUTHORS: Terent'yev, A.P., Preobrazhenskaya, M.N., Ke Pang-luh

TITLE: The Reduction of Nitriles by Hydrazine-Hydrate in the Presence of Renay-Nickel

PERIODICAL: Khimicheskaya nauka i promyshlennost', 1959, Vol 4, Nr 2, pp 281-282 (USSR)

ABSTRACT: Nitriles may be reduced to primary amines by hydrazine-hydrate in the presence of Renay nickel. They are hydrated under increased pressure on the nickel. The reaction should proceed in a medium saturated with ammonia in order to avoid the formation of secondary and tertiary amines. In some cases, e.g. in the reduction of the nitrile of the o-toluyyl acid, the reaction is complicated by the interaction of the nitriles with hydrazine.

Card 1/2 There are 9 references, 2 of which are Soviet, 3 American, 2 English and 2 German.

SOV/63-4-2-31/39

The Reduction of Nitriles by Hydrazine-Hydrate in the Presence of Renay-Nickel

ASSOCIATION: Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova (Moscow
State University imeni M.V. Lomonosov)

SUBMITTED: September 19, 1958

Card 2/2

5(3)

SOV/62-59-4-14/42

AUTHORS:

Nesmeyanov, A. N., Freydlina, R. Kh., Petrova, R. G.,
Terent'yev, A. B.

TITLE:

Interaction of 1,1,1-Trichloropropene With Sulphene Chlorides
and Sulphur Dichloride (Vzaimodeystviye 1,1,1-trikhlorpropena s
sul'fenkhloridami i dvukhloristoy seroy)

PERIODICAL:

Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk,
1959, Nr 4, pp 657-662 (USSR)

ABSTRACT:

In the present work the addition of phenyl-, benzil-, 2,4-di-
nitrophenyl-, 2-nitrophenyl sulphene chloride and sulphur di-
chloride to 1,1,1-trichloropropene was investigated. The addi-
tion of phenyl sulphene chloride to 1,1,1-trichloropropene gave
1,1,1,3-tetrachloroisopropylphenylsulphide as the main product.
The dehydrochlorination of 1,1,1,3-tetrachloroiso propyl phenyl
sulphide with alkali in ethyl Cellosolve gives a mixture the
composition of which depends mainly on the reaction conditions.
The investigation of the reactions of other sulphene chlorides
shows that 2,4-dinitro- and 2-nitrophenyl sulphene chlorides do
not associate with 1,1,1-trichloropropene under the assumed
conditions. The reaction of 1,1,1-trichloropropene with benzil

Card 1/2

S07/62-59-4-14/42

Interaction of 1,1,1-Trichloropropene With Sulphene Chlorides and Sulphur
Dichloride

sulphene chloride is more complicated and forms mainly a dehydrochlorinated adduct. The consideration of the reaction of 1,1,1-trichloropropene with sulphur dichloride, 2,4-dinitro- and 2-nitrophenyl sulphene chloride shows a similarity between the action of the $-CCl_3$ group having no double bond on the next double bond and the action of other acceptor groups having π -bonds. Sulphur dichloride reacts with 1,1,1-trichloropropene to form 1,1,1,3-tetrachloroisopropyl sulphene chloride. There are 6 references, 4 of which are Soviet.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR
(Institute of Elemental-organic Compounds of the Academy of Sciences, USSR)

SUBMITTED: July 13, 1957

Card 2/2

5(3)
AUTHORS: Terent'yev, A. P., Luskina, B. M. SOV/75-14-1-23/32

TITLE: Organic Elementary Analysis by the Method of "Wet Combustion"
(Elementarno-organicheskiy analiz metodom "mokrogo sozhzheniya")

PERIODICAL: Zhurnal analiticheskoy khimii, 1959, Vol 14, Nr 1, pp 112-117
(USSR)

ABSTRACT: In the present paper the method of "wet combustion" for the simultaneous determination of carbon, halogens, and nitrogen in organic substances is employed. The weighed-in portion of the substance is burned by wet combustion at 150 - 160° with a mixture of concentrated sulfuric acid and a concentrated aqueous solution of chromic acid. The duration of combustion does not exceed 30 minutes. The gaseous oxidation products formed are led by means of an oxygen current through a quartz tube heated to a temperature of 700 - 750° and charged with a catalyst (chromous oxide on pumice stone). Carbon is oxidized to CO₂, which is adsorbed on ascarite and weighed out. The halogens are isolated in the elementary state or in form of hydrogen halides. They are absorbed in an acetic acid solution of hydrazine hydrate (p_H 6) and are argentometrically

Card 1/2

Organic Elementary Analysis by the Method of
"Wet Combustion"

SOV/75-14-1-23/32

titrated according to Volhard. Nitrogen is determined after combustion as ammonia from an alkaline solution. Together with carbon, halogens and nitrogen, also iron, copper, silicon, and other elements can be determined which are turned into salts by oxidation and are left over in the sulfuric acid solution. The method worked out in this paper is of interest especially for industrial laboratories. It is possible to analyze not only dry substances but also solutions of organic compounds in water or sulfuric acid. An apparatus suited for carrying out determination is illustrated and described. Determination itself is also described in detail. The results obtained by a number of determinations carried out by this method are given. Accuracy is satisfactory. Also silicon-organic substances can be analyzed in this manner. There are 1 figure, 6 tables, and 7 references, 3 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova
(Moscow State University imeni M. V. Lomonosov)

SUBMITTED: May 17, 1957
Card 2/2

5(2)

AUTHORS:

Terent'yev, A. P., Litvin, K. I.,
Rukhadze, Ye. G.

SOV/75-14-3-5/29

TITLE:

The Method of Nascent Reagents (Metod voznikayushchikh reagentov). Communication 2. The Use of Dioxane in the Determination of Calcium and Strontium as Sulfates (Soobshcheniye 2. Primeneniye dioksana pri opredelenii kal'tsiya i strontsiya v vide sul'fatov)

PERIODICAL:

Zhurnal analiticheskoy khimii, 1959, Vol 14, Nr 3, pp 288-293 (USSR)

ABSTRACT:

Dioxane forms with metal salts complexes which dissociate slowly. It exhibits at the same time an effect of salting-out. The SO_4^- ion (nascent ion) which is formed by hydrolysis of dimethyl sulfate yields compact precipitates with excess dioxan in weakly acid or neutral solution (Fig). On the basis of this phenomenon a rapid method was devised for the determination of Ca as sulfate-semihydrate or anhydrite. The determination of Ba and Ca in one run is carried out by inhibition of the CaSO_4 -separation by means of glycerin. After

Card 1/2

The Method of Nascent Reagents. Communication 2. SOV/75-14-3-5/29
The Use of Dioxane in the Determination of Calcium and
Strontium as Sulfates

filtering the BaSO_4 -precipitate CaSO_4 is precipitated by
addition of dioxane. Further the analysis methods for the
determination of Ca in the presence of Al, Fe, NH_4 and HCl
are given. So are the directions for the determination of Ca
in limestone and clay, and for the determination of strontium.
There are 1 figure, 7 tables, and 29 references, 10 of which
are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova
(Moscow State University imeni M. V. Lomonosov).
Gornyy institut, Moskva (Mining Institute, Moscow)

SUBMITTED: September 21, 1957

Card 2/2

SOV/75-14-4-27/30

5(3)

AUTHORS:

Terent'yev, A. P., Buzlanova, M. M., Obtemperanskaya, S. I.

TITLE:

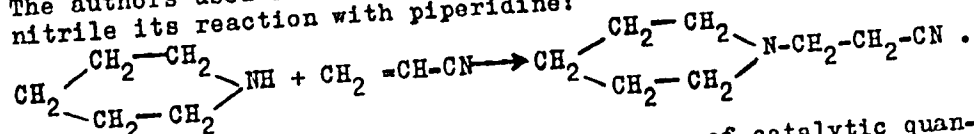
Quantitative Determination of Acrylonitrile by Means of Piperidine

PERIODICAL:

Zhurnal analiticheskoy khimii, 1959, Vol 14, Nr 4, p 506 (USSR)

ABSTRACT:

The authors used for the quantitative determination of acrylonitrile its reaction with piperidine:



The reaction is quantitative in the presence of catalytic quantities of acetic acid. The formed β -(N-piperidyl)-propionitrile has basic properties and can be titrated with acid. The weighed sample of acrylonitrile is treated at room temperature during 30 minutes with an excess of piperidine. The piperidine excess is bound by acetic anhydride and the β -(N-piperidyl)-propionitrile then is titrated with a solution of concentrated hydrochloric acid in anhydrous methanol. A mixture of methyl red and methylene blue is used as indicator. The amide and the acetic acid formed in the reaction of piperidine with acetic anhydride do not

Card 1/2

Quantitative Determination of Acrylonitrile
by Means of Piperidine

SOV/75-14-4-27/30

disturb the titration. Prior to the analysis the acrylonitrile has to be dried over calcium chloride and distilled. Purified dioxane is used as solvent for the reaction. As piperidine may always contain impurities though it has been thoroughly purified and as these impurities react with acid and are not bound by acetic anhydride, a blank test has to be conducted simultaneously with the determination. Acrylic acid and its esters disturb the described determination method; ethylene cyanohydrin does not disturb the determination. For checking the method the authors determined acrylonitrile also with the sulfite method (Ref 2). The results are in good accordance. One table lists the results of 6 determinations with the new method. The error does not exceed 0.3%. The paper contains a detailed description of the preparation of the methanolic hydrochloric acid and the indicator as well as the process of determining acrylonitrile. There are 1 table and 2 Soviet references.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova
(Moscow State University imeni M. V. Lomonosov)

SUBMITTED: April 3, 1958
Card 2/2

24(7),7(3)
AUTHORS:

SOV/48-23-10-10/39
Kazitsyna, L. A., Lokshin, B. V., Polstyanko, L. L., Terent'yev, A. P.

TITLE:

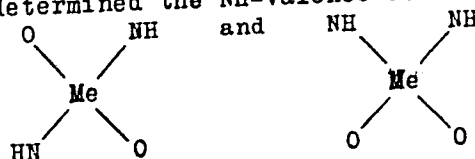
The Infrared Spectra of Some Innercomplex Compounds Within the Range of NH-Valence Oscillations

PERIODICAL:

Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1959, Vol 23, Nr 10, pp 1196-1198 (USSR)

ABSTRACT:

The authors investigated a number of innercomplex metal compounds (coordinate number 4) by means of infrared spectra within the range 3000 - 3500 cm^{-1} and determined the NH-valence oscillation frequency in the formations



The formulas for the structure of the investigated compounds are given (Me denotes the metal). The substance to be investigated was prepared as vaseline paste; measurements were carried out by using a spectrophotometer of the type IKS-11. The results are shown by a table. Figures 1 - 3 show the characteristic shape of the spectra of three compounds. The data given by the table are

Card 1/2

The Infrared Spectra of Some Innercomplex Compounds
Within the Range of NH-Valence Oscillations

SOV/48-23-10-10/39

then discussed. One or several bands may occur in the spectrum. If one band occurs in the spectrum of an innercomplex compound containing an NH-group in connection with NH-valence oscillations, this may be considered to prove the existence of a plane trans-structure of the complex. The non-existence of a splitting-up in the spectra of solutions and the occurrence of only one band may be considered to prove the existence of a trans-structure only if the solvent exercises no essential influence upon the interaction between the metal and the donor atoms. There are 3 figures, 1 table, and 4 references, 1 of which is Soviet.

Card 2/2

5(2)

AUTHORS:

Terent'yev, A. P., Luskina, B. E.,
Syavtsillo, S. V.

SOV/32-25-3-10/69

TITLE:

Analysis of Used up Copper-silicon Alloys (Analiz otrabotannykh kremnemednykh splavov)

PERIODICAL:

Zavodskaya Laboratoriya, 1959, Vol 25, Nr 3, pp 288 - 289
(USSR)

ABSTRACT:

The Cu/Si alloys used according to the synthesis of alkyl- and arylchlorosilanes (up to 20% Cu and 80% Si) consist, after being used up, of free silicon, metallic Cu, and admixtures of carbon and metal chlorides (Ref 1). The determination of C, Cl, Si, Cu, and Fe (from a weighed portion) according to the method of "wet" burning is described. The weighed portion is heated in the oxygen current with concentrated sulphuric acid and chromium oxide. The oxidation products enter a quartz tube heated to 700-750°, filled with chromium oxide where a complete decomposition takes place. The chlorine and hydrogen chloride synthesized is absorbed in the hydrazine hydrate. The metals remain in the reaction flask as sulphates. Si, SiO₂, and SiC

Card 1/2

Analysis of Used up Copper-silicon Alloys

SOV/32-25-3-10/62

do not dissolve and can be weighed together. Copper is separated from iron by use of sodium sulphide and iodometrically titrated. The remaining iron may be titrated as Fe(II) with potassium bichromate in the presence of diphenylamines. A precise course and the results of analysis (Table) are mentioned. Duration: 2.5 - 3 hours. There are 1 figure, 1 table, and 2 Soviet references.

Card 2/2

SOV/79-29-1-19/74

AUTHORS:

Grinev, A. N., Yermakova, V. N., Terent'yev, A. P.

TITLE:

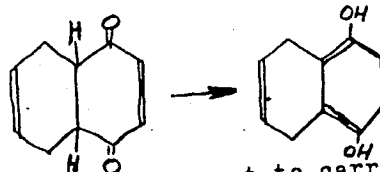
Investigations in the Field of Quinones (Issledovaniya v oblasti khinonov) XXIV. Isomerization of the Adducts of p-Quinones With Diene Hydrocarbons (XXIV. Izomerizatsiya adduktov p-khinonov s diyenovymi uglevodorodami.)

PERIODICAL:

Zhurnal obshchey khimii, 1959, Vol 29, Nr 1, pp 86-89 (USSR)

ABSTRACT:

An important method of synthesis of the substituted hydroquinones is the isomerization of the p-quinone adducts with diene hydrocarbons:



In this connection the authors suggest to carry out the isomerization of the adducts by boiling with acetic acid as they had already done in the case of synthesis of 2-methyl-5,8-dihydro-5,8-endoethylene naphtho-hydroquinone (Ref 6). This method permits the condensation of the quinones by diene hydrocarbons, as well as the isomerization of the adducts formed,

Card 1/3

SOV/79-29-1-19/74

Investigations in the Field of Quinones. XXIV. Isomerization of the Adducts of p-Quinones With Diene Hydrocarbons

into the substituted hydroquinones without separation of the adducts. In the present paper the following hydroquinones were synthesized: 5,8-dihydro naphthohydroquinone (I), 6-methyl-5,8-dihydro naphthohydroquinone (II), 2-methyl-5,8-dihydro naphthohydroquinone (III), 6,7-dimethyl-5,8-dihydro naphthohydroquinone (IV), 2-chloro-5,8-dihydro naphthohydroquinone (V), 2,3-dichloro-5,8-dihydro naphthohydroquinone (VI), 2,3-dichloro-6-methyl-5,8-dihydro naphthohydroquinone (VII), 2,3-dimethyl-1,4-dihydro anthrahydroquinone (VIII), 2,3,5-trimethyl-1,4-dihydro anthrahydroquinone (IX), 2,3,6-trimethyl-1,4-dihydro anthrahydroquinone (X) and 6-methyl-1,4-dihydro-1,4-endo-ethylene anthrahydroquinone (XI). The quantity of reagents, reaction duration, melting points, yields and analyses of these hydroquinones are given in table 1. For the first time the adducts of 5-methyl naphthoquinone were synthesized with 2,3-dimethyl butadiene (XII), the adducts of 6-methyl naphthoquinone with 2,3-dimethyl butadiene (XIII) and the adducts of 6-methyl naphthoquinone with cyclohexadiene (XIV). Table 2 gives yields, melting points and analyses of the adducts

Card 2/3

SOV/79-29-1-19/74

Investigations in the Field of Quinones. XXIV. Isomerization of the Adducts of p-Quinones With Diene Hydrocarbons

mentioned. There are 2 tables and 9 references, 6 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)

SUBMITTED: November 16, 1957

Card 3/3

SOV/79-29-1-20/74

AUTHORS: Grinev, A. N., Yermakova, V. N., Terent'yev, A. P.

TITLE: Investigations in the Field of Quinones (Issledovaniya v oblasti khinonov) XXV. Synthesis of Naphthoquinones and Dihydro Anthraquinones (XXV. Sintez naftokhinonov i digidroantra-khinonov)

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 1, pp 90-92 (USSR)

ABSTRACT: In one of the earlier papers the authors showed that the easiest way to obtain 1,4-naphthoquinone and 2-methyl-1,4-naphthoquinone is from p-benzoquinone (toluquinone) and divinyl in which case the reaction takes place without separation of adducts and hydroquinones obtained from their isomerization (Ref 1). According to this method 6-methyl naphthoquinone (I) and 5-methyl naphthoquinone (II) were found in the present work. 6,7-dimethyl-1,4-naphthoquinone (III) was obtained in high yield by the oxidation of 6,7-dimethyl-5,8-dihydro-naphthoquinone (Ref 2). 2,3-dichloro-p-naphthoquinone (IV) was obtained from 2,3-dichloro-p-benzoquinone and divinyl. Apart from this several quinones already characterized in the previous paper were oxidized in an acid medium with potassium

Card 1/2

SOV/79-29-1-20/74

.Investigations in the Field of Quinones. XXV. Synthesis of Naphthoquinones and Dihydro Anthraquinones

bromate. The following anthraquinones were obtained: 6-methyl-1,4-dihydro-1,4-endoethylene anthraquinone (V), 6,7-dimethyl-1,4-dihydro-1,4-endoethylene anthraquinone (VI), 2,3-dimethyl-1,4-dihydro anthraquinone (VII), 2,3,5-trimethyl-1,4-dihydro anthraquinone (VIII) and 2,3,6-trimethyl-1,4-dihydro anthraquinone (IX). The table gives the experimental results of the synthesis of dihydro anthraquinones. There are 1 table and 5 references, 2 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)

SUBMITTED: November 14, 1957

Card 2/2

SOV/79-29-1-21/74

AUTHORS: Kost, A. N., Grandberg, I. I.,
Terent'yev, A. P., Milovanova, S. N.

TITLE: Reactions of Hydrazine Derivatives (Reaktsii proizvodnykh
gidrazina)
XXI. 1-Thiocarboxy Pyrazolines and Their Derivatives
(XXI. 1-Tiokarboksipirazoliny i ikh proizvodnyye)

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 1, pp 93-97 (USSR)

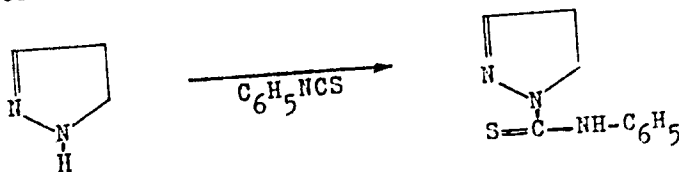
ABSTRACT: Recently, the derivatives of thiourea were used as antibiotics
(Ref 1), as poisons against rodents (Ref 2), etc. The salts of
the dithiocarbamic acids are frequently applied in the
analytical chemistry to the separation and quantitative
determination of some cations (Ref 3). The authors synthesized
some phenyl thioureas of the pyrazoline series, the anilides
of the 1-pyrazoline-thiocarboxylic acids (I - VIII in table 1),
by the reaction of phenyl isothiocyanate with pyrazolines which
possess a nitrogen atom non-substituted in position 1.

Card 1/3

Reactions of Hydrazine Derivatives.

XXI. 1-Thiocarboxy Pyrazolines and Their Derivatives

SOV/79-29-1-21/74



When carbon disulfide was acting in the pyrazolines, 1-pyrazoline dithiocarboxylic acids were obtained in the form of sodium salts. They are stable in dry, crystalline state. On acidification of the aqueous (alkaline!) solution a decomposition takes place, as the dithiocarboxylic acids are unstable (Scheme 2). 0.2 % aqueous solutions of the pyrazoline dithiocarbonates of sodium remain unchanged for 2-3 days, but not at a higher percentage. It was found that pyrazoline dithiocarbonates form internal complex compounds with a number of metal ions, which might be interesting for analytical chemistry. Their bacterial activity was investigated. The pyrazoline dithiocarbonates obtained (IX - XVIII, Table 2) decompose at a temperature which is lower than their melting point. Therefore they passed, according to scheme 3, to the

Card 2/3

Reactions of Hydrazine Derivatives.
XXI. 1-Thiocarboxy Pyrazolines and Their Derivatives

30V/79-29-1-21/74

β -cyano-ethyl ethers with distinctly marked melting point.
There are 2 tables and 11 references, 8 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet i Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy institut imeni S. Ordzhonikidze (Moscow State University and All-Union Chemico-Pharmaceutical Scientific Research Institute imeni S. Ordzhonikidze)

SUBMITTED: December 2, 1957

Card 3/3

SOV/79-29-1-66/74

AUTHORS: Terent'yev, A. P., Volodina, M. A., Vasina, L. G.

TITLE: Synthesis and Properties of Pyrrolidine Bases (Sintez i svoystva pirrolidinovykh osnovaniy). V. Ethyl Ether of 5-Methyl Prolinol and Its N-Substituted Homologs (V. Etilovyy efir 5-metilprolinola i yego N-zameshchennyye gomologi)

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 1, pp 314-317 (USSR)

ABSTRACT: The authors continued their investigations (Refs 1,2) and hydroaminated α -ethoxy-methyl- γ -acetopropyl alcohol (I) in order to obtain the synthesis of the derivatives of 5-methyl prolinol and its N-substituted homologs as some of them are of considerable physiological activity (Ref 5). This paper describes the synthesis of ethyl ether of 5-methyl propinol and its N-substituted homologs (II) carried out by hydroamination of α -ethoxy-methyl- γ -acetopropyl alcohol with formamide and its N-substituted products (Scheme 1). Compound (I) was obtained according to scheme 2. Compound (III) was synthesized from epichlorohydrin in the presence of anhydrous SnCl_4 or $\text{BF}_3 \cdot \text{O}(\text{C}_2\text{H}_5)_2$. Lactone (V) was decarboxylated according to

Card 1/3

SOV/79-29-1-66/74

Synthesis and Properties of Pyrrolidine Bases. V. Ethyl Ether of 5-Methyl
Prolinol and Its N-Substituted Homologs

Vanderwerf (Ref 6) with diluted hydrochloric acid. In connection with the hydroamination of γ -keto alcohol either the formyl derivative of the amine was used or the amine together with formic acid. The addition of a nickel catalyst does not increase the yield, permits, however, a considerable reduction of the reaction temperature. The presence of two asymmetrical centers in the synthesized pyrrolidine bases rendered the separation of the individual products more difficult. In most cases the picrates and picrolonates of pyrrolidines were separated only as not crystallizable oils. Thus, the ethyl ethers of 5-methyl prolinol (IIa), 1,5-dimethyl prolinol (IIb), 1-ethyl-5-methyl prolinol (IIv), and 1-butyl-5-methyl prolinol (IIg) were synthesized in a yield of 40 - 50%. Contrary to expectations, the molecular refraction of the pyrrolidines obtained is smaller than that theoretically calculated. There are 8 references, 5 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)
Card 2/3

SOV/79-29-8-18/81

5(3)

AUTHORS:

Terent'yev, A. P., Preobrazhenskaya, M. N., Bobkov, A. S.,
~~Sorokina, G. M.~~

TITLE:

Introduction of Substituents Into the Benzene Nucleus of Indole.
IV. Synthesis of Bromo-, Nitro- and Aminoindoles and Indolines
(Ref 22)

PERIODICAL:

Zhurnal obshchey khimii, 1959, Vol 29, Nr 8, pp 2541-2551
(USSR)

ABSTRACT:

In the present paper, the authors used the scheme previously carried out by them regarding the synthesis of indoles substituted in the benzene nucleus. (Ref 1) also for the synthesis of 6-nitro- and 6-nitro-methylindole. The initial products were indoline (I) and 2-methylindoline (II). Indole can be converted into indoline (I) by hydrogenation in the autoclave on Reney's nickel catalyst at 100° and 100-150 atm (Ref 2). Compound (II) was obtained according to scheme 2 by reduction of methyl indole with zinc in hydrochloric acid (Ref 3). According to the nitration of compound (II) described in a publication (Ref 4), compound (I) gave, on nitration, compound (III) in quantitative yield, which was converted into (V) by acylation. In the present

Card 1/2

SOV/79-29-8-18/81

Introduction of Substituents Into the Benzene Nucleus of Indole. IV. Synthesis of Bromo-, Nitro- and Aminoindoles and Indolines (Ref 22)

paper, chloroaniline was used for the dehydrogenation of the N-unsubstituted 6-nitroindolines. The dehydrogenation of (III) with chloroaniline in boiling xylene yielded (VI), the dehydrogenation of (IV) gave (VII). On oxidation of the indole (VI), (VIII) was separated; the oxidation of (VII) gave (IX). On nitration of the indolines with the nitrating mixture in concentrated sulfuric acid, the nitro group enters position 6 of the indoline ring, and on nitration of the 1-acetyl indolines with nitric acid, position 5 of the indoline ring. The dehydrogenation of the corresponding nitroindolines gave the following indoles: 6-nitroindole, 6-nitro-2-methylindole, 5-nitroindole, and 5-nitro-2-methylindole. By reduction of the nitroindoles and nitroindolines with hydrazine hydrate, the corresponding amino compounds were formed. There are 22 references, 4 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)

SUBMITTED: July 3, 1958

Card 2/2

SOV/79-29-2-28/71
Synthesis and Properties of Pyrrolidine Bases. VI. 2-Methyl-N- ω -amino-
hexyl Pyrrolidine and Some of Its Transformations

pointed to a remarkable physiological activity'. For this reason,
some transformations of 2-methyl-N- ω -aminohexyl-pyrrolidine
(II) were carried out, i.e. the compounds (IV-XIII) were
synthesized. Scheme 2 served as an illustration of all the
transformations specified. There are 5 references, 2 of which
are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)

SUBMITTED: December 20, 1957

Card 2/2

5 (3)
AUTHORS:

Grinev, A. N., Bukhtenko, L. A.,
Terent'yev, A. P.

SOV/79-29-3-40/61

TITLE:

Investigations in the Field of Quinones (Issledovaniya v oblasti khinonov). XXVI. Condensation of n-Quinones With Furoyl Acetate, Acetyl Acetone, and Dibenzoyl Methane (XXVI. Kondensatsiya n-khinonov a furoiluksusnym efirom, atsetilatsetonom i dibenzoilmetanom)

PERIODICAL:

Zhurnal obshchey khimii, 1959, Vol 29, Nr 3, pp 945-949 (USSR)

ABSTRACT:

Continuing earlier papers (Refs 1-13) the present paper describes the reaction of n-benzoquinone and α -naphthoquinone with furoyl acetate, acetyl acetone, and dibenzoyl methane. The condensation of n-benzoquinone and α -naphthoquinone with furoyl acetate leads to compound (I), to a derivative of benzodifurane and to compound (II). The formulas (III) and (IV) are suggested for the structure of the derivative of benzodifurane. In reacting n-benzoquinone and α -naphthoquinone with acetyl acetone in the presence of zinc chloride the conditions were found, under which compounds (V) and (VII) are formed in yields of 60-65 %. The relatively high yields of these compounds can be obtained only by the gradual addition of the quinones into

Card 1/2

Investigations in the Field of Quinones.
XXVI. Condensation of n-Quinones With Furoyl Acetate, Acetyl Acetone, and
Dibenzoyl Methane

SOV/79-29-3-40/61

the reaction mass, as the redox side processes are eliminated in this way. Compound (VIII) was synthesized by the condensation of 2,3-dichloro-n-benzoquinone with the imine of acetyl acetone (90 % yield), which fact points to still another possible method. The reaction of α -naphthoquinone with dibenzoyl methane led to unexpected results. The resulting chief product was the adduct (IX), besides small amounts of compound (X). On the methylation of (IX) with dimethyl sulphate in alkaline medium, compound (XI) is obtained. There are 19 references, 13 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)

SUBMITTED: January 27, 1958

Card 2/2

5 (3)
AUTHORS:

Terent'yev, A. P., Potapov, V. M.,
Dem'yanovich, V. M.

SOV/79-29-3-41/61

TITLE:

New Aromatic Homologues of Taurine (Novyye aromaticheskiye
gomologi taurina)

PERIODICAL:

Zhurnal obshchey khimii, 1959, Vol 29, Nr 3, pp 949-952 (USSR)

ABSTRACT:

The synthesis of the taurine homologues (Ref 1) which the authors had already earlier worked out by the reduction-amination according to Leuckart of the β -keto sulfo acids (Ref 2) which are now easily accessible, was applied also in the work under review for the synthesis of new aromatic taurine homologues of the substituted β -phenyl taurines. The initial ketones of the aliphatic-aromatic series obtained according to Friedel-Crafts (Ref 3) (by condensation of the corresponding benzene compounds with acetyl chloride) were transformed by dioxane sulfotrioxide into the β -keto sulfo acids. Table 1 shows the constants of their ammonium and S-benzyl thio-uronium salts. The ammonium salts of β -ketone sulfo acids were introduced into the reduction-amination reaction. As reagents were used formamide (method A), a mixture of 85 % formic acid and ammonium carbonate (method B), as well as a mixture of urea

Card 1/3

New Aromatic Homologues of Taurine

SOV/79-29-3-41/61

and anhydrous formic acid (method C). On the synthesis of β -phenyl taurine from the ammonium salt of ω -acetophenone sulfo acid, the method B gave the highest yields. To avoid a hydrolysis of the sulfo group at the beginning of the reaction, the water was expelled in the Wurtz flask at 185° as long as the medium was still acid by excess of formic acid. After cooling, ammonium salt of β -ketosulfo acid was added to the mixture obtained, consisting of formamide and ammonium formate, and the whole was heated during 6 hours up to $180-185^{\circ}$. The reaction began at $120-125^{\circ}$. The hydrogen sulfide development showed that the sulfo group participated in the reaction. A control proved that the sulfo group of the forming amino sulfo acid is not affected under the reaction conditions. For some derivatives of β -phenyl taurine, quantitative yields were obtained on the reaction of the corresponding β -ketone sulfo acids with the mixture of urea in anhydrous formic acid (method C). The constants of the taurines synthesized may be seen in table 2. There are 2 tables and 3 references, 2 of which are Soviet.

Card 2/3

New Aromatic Homologues of Taurine

SOV/79-29-3-41/61

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)

SUBMITTED: February 9, 1958

Card 3/3

5 (3)
AUTHORS:

Potapov, V. M., Terent'yev, A. P.,
Dem'yanovich, V. M.

SOV/79-29-3-42/61

TITLE:

Stereochemical Investigations (Stereokhimicheskiye issledovaniya).
V. The Optically Active β -Phenyl Taurine (V. Opticheski aktiv-
nyy β -feniltaurin)

PERIODICAL:

Zhurnal obshchey khimii, 1959, Vol 29, Nr 3, pp 953-954 (USSR)

ABSTRACT:

Not long ago the authors worked out a convenient method of synthesizing taurine homologues (Ref 1) from ketones by sulfurization with dioxane sulfoxide and the subsequent reduction-amination according to Leuckart. The taurine homologues of the type $Ar-CHNH_2-CH_2SO_3H$ resulting therefrom have an asymmetric carbon atom. It was of interest to try to obtain these homologues in the optically active form as well. The experiment made in this direction showed that β -phenyl taurine can indeed be obtained in the optically active form. For this purpose, the corresponding barium salt was obtained from the ammonium salt of N-formyl- β -phenyl taurine (I), which led to the diastereomer I(-)II-salts on the reaction with the sulfate (-) of α -phenylethylamine (II). In their

Card 1/2

Stereochemical Investigations. V. The Optically Active β -Phenyl Taurine SOV/79-29-3-42/61

recrystallization from water, one of their diastereomers was separated, which yielded the optically active β -phenyl taurine after decomposition (Scheme). It is to be noted that this active taurine differs considerably from the racemic type with respect to the crystal shape and its properties. The racemate has a different crystal shape from the optically active taurine and melts at $347-349^{\circ}$ against $317-320^{\circ}$. Also their solubility in water differs. The decomposition of β -phenyl taurine into the optical antipodes was realized through the diastereomer salt of its formyl derivative with (-) α -phenyl ethyl amine. There are 1 table and 2 references, 1 of which is Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)
SUBMITTED: January 23, 1958

Card 2/2

5(3)
AUTHORS:
TITLE:

Kost, A. N., Yudin, L. G., Terent'yev, A. P.

SOV/79-29-6-39/72

Synthesis of the 9,10-Dialkyl Lilolidenes (Sintez 9,10-dial-killilolidenov)

PERIODICAL:

Zhurnal obshchey khimii, 1959, Vol 29, Nr 6,
pp 1949 - 1953 (USSR)

ABSTRACT:

According to reference 4 a synthesis of the lilolidenes based on the Fischer reaction was suggested. Compound (II) was synthesized from 1,2,3,4-tetrahydroquinoline by means of the nitroso compound (II); its reaction with pyrotartaric acid led to the hydrazone which with stannous chloride finally yielded lilolidene carboxylic acid. The authors used this method for the synthesis of a series of 9,10-dialkyl lilolidenes-9 according to the general scheme 1. The treatment of tetrahydroquinoline with nitrous acid was carried out by means of diluted sulphuric acid and not with hydrochloric acid (Ref 5) since in this case a regrouping of the nitroso group into position 6 is possible. The ethereal extraction of the nitroso compound was washed out with water for several times since traces of nitric and nitrous acid produce low yield. The method of reduction described in publications (Refs 4,6) leads to low yields in amino (III) since

Card 1/2

Synthesis of the 9,10-Dialkyl Lilolidenes

SOV/79-29-6-39/72

an elimination of the nitroso group takes place and tetrahydroquinoline forms as the main product. For this reason the reduction was carried out at 10-15° and in ethyl- instead of methyl alcohol. The amine (III) yields in this case increase to 75-80%. The 1-aminotetrahydroquinoline obtained led, in the case of heating with carbonyl containing compounds to oily hydrazones which were directly transformed into the lilolidenes. The zinc chloride used in the Fischer regrouping could not be used in the present case because of resinification and difficult purification. In the case of diluted sulphuric acid, however, the formation of the lilolidenes takes place with yields of 60-95% without resinification. The structure of the synthesized products was confirmed by the reduction of the compound (IV) into the compound (V) which was obtained by the reaction of 2,3-dimethyl indoline with trimethylene bromochloride (Scheme 2). This was also confirmed by the melting of the mixture of the two compounds without temperature decrease and by spectrum analysis. There are 1 figure and 8 references, 3 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)
SUBMITTED: April 14, 1958
Card 2/2

5 (3)
AUTHORS:

Terent'yev, A. P., Volodina, M. A.,
Mishina, V. G., Komissarov, I. V.

SCV/79-29-7-44/83

TITLE:

Synthesis and Properties of Pyrrolidine Bases (Sintez i
svoystva pirrolidinovykh osnovaniy). VII. Some Esters of
2-Methyl-N- β -oxyethylpyrrolidine (VII. Nekotoryye slozhnyye
efiry 2-metil-N- β -oksietilpirrolidina)

PERIODICAL:

Zhurnal obshchey khimii, 1959, Vol 29, Nr 7, pp 2307 - 2310
(USSR)

ABSTRACT:

The authors continued their investigation of the hydroamination
of γ -keto alcohols (Refs 1,2), and in the present work they in-
vestigated the reaction of γ -acetopropyl alcohols (I) with
ethanol amine in the presence of formic acid, using purified
commercial γ -acetopropyl alcohol. 2-Methyl-N- β -oxyethylpyrro-
lidine (II) was obtained as final product in a 56% yield. As
well as this synthesis some reactions of compound (II) were
described. (II) on treatment with thionyl chloride yielded
2-methyl-N- β -chloroethylpyrrolidine hydrochloride (III), which
was converted into the free base (IV). Reaction of (IV) with a
number of aromatic acids gave the corresponding esters (V),
which were separated as hydrochlorides. Esters of the following

Card 1/2